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"The Boston Fire"

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THE BOSTON FIRE

November 9, 1872

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BUREAU OF
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FACSIMILE FROM "REPORT OF THE COMMISSIONERS APPOINTED TO INVESTIGATE THE CAUSE AND MANAGEMENT OF THE GREAT FIRE IN BOSTON."

Statement of the number of Engines, Hose, and Hook & Ladder, Carriages, with the number of Men and amount of Hose that attended the great Fire of Nov. 9th, from out of town.

Chief Engineer.	City or Town.	Engines.	Hose Companies.	Hook & Ladder Companies.	Men.	Feet of Hose.
P. H. Raymond	Cambridge, Mass.	3	2	1	75	1,500
Wm. E. Delano	Charlestown, "	2	3	0	60	2,000
Samuel Hutchins . . .	Chelsea, "	1	2	0	85	1,000
W. W. Kimball	Lynn, "	2	2	0	27	1,400
D. B. Lord	Salem, "	2	1	0	67	2,000
Luther Ladd	Lawrence, "	1	1	0	11	700
Alfred Kenrick, jr. . .	Brookline, "	1 (hand)	1	1	69	1,100
C. A. Belford	W. Roxbury, "	2	1	0	21	1,200
James R. Hopkins . .	Somerville, "	1	3	0	60	1,200
A. D. Drew	Watertown, "	1	1	0	21	800
R. M. Lucas	Newton, "	2	2	0	51	1.750
S. E. Combs	Worcester, "	2	3	0	60	3.800
Thomas J. Borden . .	Fall River, "	2	4	0	60	2.200
Onslow Gilmore . . .	Stoneham, "	1	1	0	18	850
T. W. Hough	Malden, "	1	2	0	54	2,000
John R. Morton	Melrose, "	2	1	0	15	400
Benj. H. Sumner . . .	Medford, "	1	2	0	40	1,000
Chas. H. Davis	Wakefield, "	2 (hand)	0	0	88	750
Wm. H. Temple . . .	Reading, "	1 (hand)	1	0	105	500
A. H. Howland, jr. . .	New Bedford, "	1	1	0	26	700
Marshall Parks	Waltham, "	1	1	0	14	700
Oliver E. Green	Providence "	3	3	0	30	1,700
A. E. Hendrick	New Haven, "	1	1	0	22	900
Daniel A. Delamoy . .	Norwich, "	2	3	0	166	2,300
S. L. Marston	Portsmouth, N. H.	1	1	0	45	1,100
B. C. Kendall	Manchester, "	2	2	0	63	1.200
. . . . .	Biddeford, Maine. Started and got as far as Portsmouth, N. H.	0	2	0	175	3,000
A. J. Cummings . . .	Portland, "	1	1	0	12	1,000
E. G. Parrott, Com'dant	Charlestown Navy Yard	2	2	1	81	1,000
T. T. S. Laidley, "	Watertown Arsenal,	1	2	0	25	1,100
E. P. Davis, Chief Eng.	Hyde Park,	1	1	0	55	1,200

The Great Boston Fire

By JOHN W. DECROW

NOVEMBER 9th and 10th will mark the fiftieth anniversary of the Great Boston Fire of 1872, by far the worst conflagration which has ever visited the city and which before it was subdued had travelled over an area of about sixty-five acres in the heart of the city, had consumed more than seven hundred and fifty buildings, and caused a loss approximating seventy-five millions of dollars.

To the great majority of our active business men of today, the fire is but a hazy story, the details of which are little known. In the popular mind there are two outstanding features—the fire started in a hoop skirt factory and the horses in the city, including those of the fire department, were suffering from an epidemic of sickness called "epizootic."

Boston in 1872 was a city of something over 250,000 persons but in considering these figures we must remember that Charlestown, West Roxbury including Jamaica Plain, Brighton and Hyde Park were independent municipalities so that for comparison with the present day population we must include the population of these places which will bring the figures, according to the census of 1870, up to 296,635.

It may be interesting in order to get a true viewpoint of the growth of Greater Boston in the last half century to know the population of some of the closely adjacent municipalities, according to the figures of the census of 1870 and census of 1920, the figures before the dash being the population in 1870, the figures after the dash being the population in 1920. Brookline 6,650—37,748; Cambridge 39,634—109,694; Somerville 14,685—93,091; Chelsea 18,547—43,184; Everett 2,220—40,120; Malden 7,367—49,103; Revere 1,197—28,823; Milton 2,683—9,382.

Boston's figures are 748,060 according to the 1920 census so that by the same comparison Boston's own growth has been from 296,635 to 748,060. Electric cars, automobiles and the telephone, all of which have played a part in this concentration of population and all of which are now an important part of our every day life, were then unheard of.

Nearly all the streets in the section of the city devastated by the fire were narrower than they are today. Franklin Street extended only from Washington Street to Federal Street, and Hawley Street was a narrow lane. Fort Hill had been levelled but was not built over. Post Office Square did not exist. The Post Office was in the Merchant's Exchange Building on State Street where the present Exchange Building now stands. The westerly portion of the present Post Office building was approaching completion and played a part in checking the fire on one side. Evidence of this may be seen today in the chipped granite block below the memorial tablet on the Devonshire and Milk Street corner.

The business section of the city had been gradually extending toward the south, and Summer Street, which but a few years before had been a residential section, more or less marked the southerly boundary of

Courtesy of the Atheneum

The above is a reproduction of an etching made by Sidney L. Smith of the building on the southeasterly corner of Kingston and Summer streets in 1872, in which the Boston Fire originated. Only through the efforts of Harold Murdock, author of "1872—The Great Boston Fire," was an old bill head of the firm of Tebbetts, Baldwin & Davis, finally secured with a picture of the structure engraved upon it.

the wholesale district. Trinity Church stood on the corner of Summer and Hawley Streets partly on land which is now in Hawley Street and partly on land now occupied by Filene's. The streets leading to the south from Summer Street were partially occupied by brick dwellings used largely for boarding and lodging houses. The best of the business buildings were of brick or granite, many with French or Mansard roofs with wood finish.

William Gaston was Mayor of the city. There was a Board of Aldermen of twelve members elected at large and a Common Council of sixty-four members elected four from each ward. The two bodies together were referred to as the City Council. The fire department was under the charge of a joint committee of the aldermen and common council; the fire alarm service was under the charge of another joint committee and the location of the apparatus houses was under the control of a third joint committee.

The Chief Engineer and the Assistant Engineers were elected annually by the City Council. John S. Damrell was the Chief Engineer and had held that office nearly seven years having previously served as an Assistant Engineer. The apparatus of the department comprised twenty-one steam fire engines, each with a hose reel or "jumper," the steamers being mostly of small capacity compared with our present day standards; ten independent "hose companies"; seven "hook and ladder carriages"; and three extinguisher companies. This apparatus was manned by a total force of about 475 men of whom about 90 were permanent men, that is, giving their whole time to the fire department and comprising an engineer, fireman and driver for each steamer, a driver for each hook and ladder, independent hose and extinguisher company, the hose reels of each steamer company, except in a few cases, being attached to and hauled behind the steamer.

The balance of the force was made up of "call men", that is men who responded from their homes and places of business upon an alarm of fire. Of the twenty-one steamers, six were located in the city proper, three in East Boston, three in South Boston, three in Roxbury and six in Dorchester, while of the seven hook and ladder carriages only two were in the city proper.

At that time there was not a single piece of fire apparatus located in the burned district and, peculiarly enough, none has since been located actually within this area. The payroll of the department for the year 1872 was approximately $224,000.00. Today the Boston Fire Department gives full time employment to about 1400 men, of whom 1200 are the actual fighting force, and has in service 50 pumping engines, 3 fire boats, 30 ladder trucks and numerous auxiliary apparatus. The yearly payroll is now over $2,400,000.00

The water service in the down town section was comprised in a single system of mains there being a twenty-four inch main in Washington Street from which a twelve inch main led through Bedford Street and down through to what was then Broad Street but is now Atlantic Avenue. This main continued on to State Street and came up State Street and connected again with the twenty-four inch main. The district lying inside was laid with six and eight inch pipes most of which had been down many years.

The hydrants for fire purposes were of an old type, offset from the mains on four inch pipes, and hav-

ing but one outlet so that only one steamer could be connected. In some cases the hydrants were many hundred feet apart. There were also scattered throughout the district quite a number of underground fire reservoirs supplied from the mains by four inch pipes. The main in upper Summer Street was a six inch main and was probably considerably reduced in efficiency by rust.

Today the district is gridironed with mains ranging from the thirty-six inch feeders down to twelve inches. Throughout the larger part of the district, there are three independent systems of mains, the so-called low service furnishing the general supply of water for domestic, business and fire purposes; the so-called high service ordinarily furnishing water for automatic sprinklers, hyraulic elevators and like uses, but easily and quickly available for fire purposes; and the so-called high pressure fire service of recent installation and intended for and devoted entirely to fire purposes. This service delivers water at the hydrant at the necessary pressure for fire uses and when available makes the use of portable pumping engines more or less unnecessary.

As compared to a single six inch main in 1872, Summer Street today has all three services, a twelve inch low service main, a twelve inch high service main and a sixteen inch high pressure fire service main. Hydrants are now all of a modern type with three and four outlets and to a large extent connected directly to the mains.

As a result of the epizootic, the city for a time previous to the fire had been practically "horseless." Street car and bus lines had been forced to suspend and teaming of any sort had been substantially at a standstill. This condition of affairs made as much of an impression on the public mind at the time as a complete cessation of vehicle traffic for a long period would today, and it is not strange, therefore, that in telling the story of the Great Fire it has many times been made to appear that the lack of horses to draw the fire apparatus was the reason for the fire getting its great headway. Directly the lack of horses seems to have had little bearing. Indirectly it may have had a considerable bearing.

On October 26th, the Chief Engineer and his fifteen Assistant Engineers (corresponding to our present Deputy and District Chiefs) met at City Hall to consider means to provide for the safety of the city from fire during the epidemic.

They decided to enroll five hundred temporary additional members of the department during the continuance of the epidemic and to pay them one dollar for each fire to which they properly responded and twenty-five cents an hour for the time they remained on duty at fires. This force was easily raised, for Boston was then not much more than a decade beyond the hand tub days when almost everyone "ran with the machine" on occasion. Drag ropes were attached to the various pieces of apparatus and the actual speed in the response to fires proved to be not much less than with horses.

In itself the lack of horses does not appear to have been the cause of any great delay on the night of the Great Fire for with a few exceptions the apparatus was hauled by man power almost as fast as it could have been with horses. On October 26th, the Chief Engineer and his fifteen Assistant Engineers (corresponding to our present Deputy and District Chiefs) met at City Hall to consider

THE BURNED DISTRICT.

The map below, prepared expressly for the Daily Advertiser, represents the portion of the city burned over in the recent conflagration, and its relation to the surrounding territory.

The shaded portion indicates the burnt district. Prominent buildings which were *not* destroyed are distinguished by black. The references are as follows:—

A—Building in which the fire began.
B—Merchants Exchange and Post-Office.
C—New Post-Office.
D—Old South Church.
E—Old State House.
F—Custom-House.
G—State-State Block.
H—Fort Hill.
I—Faneuil Hall,
J—Quincy Market.
K—B. H. & E. R. R. wharf
L—Winthrop square.

Courtesy of the Boston Transcript

From The Boston Advertiser, November 11, 1872

means to provide for the safety of the city from fire during the epidemic.

That everything was not done perhaps which could have been done to provide serviceable horses for the department is shown by the fact that by November 9th the horse railroads and bus lines had resumed operation,

though on reduced schedules, express and teaming companies were doing business, and as early as October 30th a political parade had been held, in which over one hundred horses had been used. In spite of this improved condition only five of the city's steamers were drawn by horses on the night of the fire.

At the same meeting on October 26th, the Engineers also temporarily redistricted the city and rearranged the running card of the department, so that during the continuance of the epidemic the number of steamer companies responding to alarms of fire would be materially reduced and that on the first alarm only the hose reels of the steamer companies would be taken to the fire.

The Engineers sent a request to the Police Department to have its officers, upon the discovery of a fire, investigate and find out if possible, whether the fire was above the second story of the building, and if it was above the second story to ring a second alarm without further orders. The second alarm would bring the steamers whose hose reels had already responded and some additional steamers, but even then not the number which would have responded to the first alarm under ordinary circumstances.

This seemingly unnecessary redistricting or rearrangement of the running card adopted by the Engineers as a temporary expedient during the epidemic was the cause of from five to ten minutes delay in response of three of the six downtown steamers at the Great Fire. The manner in which it actually worked out will appear later.

The fire originated in the building at the south-easterly corner of Summer and Kingston Streets on the site of the building now occupied by a Liggett Drug Store. The building had a fifty foot frontage on Summer Street and extended back along Kingston Street one hundred feet to a passageway or alley fifteen feet wide on the other side of which was a five story brick building fronting on Kingston Street.

The passage way still exists and the present building is similar in height and area to the structure destroyed. The building was constructed of granite and had an elevator in the rear corner furthest from Kingston Street, the shaft being about five and one-half feet square, sheathed with wood and opening by a door and windows onto the passageway.

The building was comparatively new, having been built in 1866, and represented the best type of construction of that time. The lower floor was occupied by the dry goods firm of Tebbetts, Baldwin & Davis; the second floor by Damon Temple & Co. dealers in men's furnishing goods, and the third and fourth floors and a part of the top floor by A. K. Young & Co., manufacturers of hoop skirts and bustles and dealers in corsets.

How or when the fire started has never been determined. Presumably, from the evidence of various persons who saw it in its early stages, it started in the basement and went up the elevator shaft and mushroomed out through the various stories, probably into the fourth and fifth stories first and then into the lower stories.

Summer Street in the early evening was not the busy thoroughfare it is today but there is no doubt that the fire was seen by many persons long before an alarm was given. Two police officers of the City of Charlestown standing on the Prison Point Bridge saw flames as early as 7:10

P. M. and remarked that there was a fire in Boston. Several police officers and private watchmen were within a few hundred yards of the scene but not one happened to pass the building before the alarm was given.

A number of the residents of Kingston Street heard the crackling of flames and saw the fire, some even as it started up the elevator shaft. As has happened many times before and since each one apparently thought that some one else had attended to the necessary duty of giving the alarm. Assistant Engineer Regan at his home on Columbia Street, heard cries of fire and it appears that he must have been at the fire as early as 7:15.

It seems that he must have assumed or have been told by bystanders that an alarm had been given. Automatic fire alarms were unknown. Some human agency must give the alarm. **The Fire Department perhaps at that time more than at any other period in its history was waiting and watching for a fire,** for without doubt the great majority of the five hundred additional men had finished their suppers and were not averse to the extra dollar which an alarm of fire would give some of them a chance to earn.

It was not, however, until police officer Page, coming through Lincoln Street to Summer Street, saw the glare of the flames over the Bedford Street buildings as he reached the corner and gave the alarm from Box 52 at 7:24 P. M. Although he had not actually seen the fire, there seems to have been no doubt in his mind that it was above the second floor for he sounded the second alarm immediately after, or as it is officially recorded, at 7:29 P. M. Steamer 7 on East Street and Hose 2 on Hudson Street had been notified of the fire by citizens and these companies were leaving their quarters as the bells began to strike the first alarm. Steamer 7's notification was that there was a fire on Bedford Street" and perhaps in the location of the fire thus given by the citizen who ran to East Street, and probably passed fire alarm box 52 on the way, fate may have played a part, for Steamer 7 went to Bedford Street, took a hydrant and ran a line of hose through the yards and over the sheds of Bedford Street to the rear of the burning building.

Hose 2 naturally came through Kingston Street and ran a line of hose from a hydrant at the corner of Kingston and Bedford Streets into the passageway at the rear and at first played into the basement of the burning building. Hose 2 appears to have had the distinction of getting "first water" on the fire. At this time the bulk of the fire must have seemed to be in the rear of the building and the danger of a spread of the flames have appeared to be the brick building on the other side of the passageway.

Fireman Cheswell of Steamer 4, destined later to become Chief of Department, heard the alarm while at his supper table and came from Harrison Avenue through Kingston Street. He, too, apparently thought the fight was to come in the passageway to prevent the spread of the fire to the building at the rear for he saw a hydrant on Kingston Street opposite the burning building and ran through Otis Street to meet Steamer 4's hose reel and guide it to that hydrant, from where a line of hose was taken to one of the upper floors of the brick building.

Courtesy of Bostonian Society

Washington Street to Old South Church After the Fire

In this way, it happened that the first three pieces of apparatus to arrive concentrated their lines in the rear at the end of the building away from Summer Street. As it turned out, it was to be some minutes more before effective apparatus was to arrive on the Summer Street side. That Engineer Regan early appreciated the seriousness of the situation is evidenced by his order to a police officer soon after the first alarm "to have three more alarms rung," which, had it been literally carried out, would have resulted at once in a "general alarm" calling out practically all the apparatus in the city.

There seems to be little doubt, though he knew that Chief Engineer Damrell or Assistant Engineer Green, also his superior, would not be long in arriving on the scene, that Engineer Regan intended to take the responsibility of ordering a general alarm. As a matter of fact, the police officer apparently understood that a third alarm was wanted and as a result the third alarm was sounded at 7:34 P. M.

It seems that fate decreed delay after delay in the chain of circumstances that night, commencing with the tremendous delay in giving the alarm followed in some cases by a slightly slower movement of some of the apparatus, owing to lack of horses, and followed by an abnormal delay in starting for the fire by some of the steamers, which, under ordinary conditions, would have responded on the first alarm.

To make this clear, it should be understood that normally Steamers 3, 4, 6, 7, 8 and 10 went to Box 52 on the first alarm. As it worked out that night, under the temporary rearrangement of the running card, Steamer 7's hose reel and Hose 2 reached the fire as soon as they would have under any circumstances and Steamer 7 itself started as the first alarm was ringing. As far as these companies were concerned, the redistricting caused no delay. Steamer 4's hose reel started on the first alarm but the steamer did not start until the second alarm was beginning to strike.

Steamer 3 from Washington Street above Dover Street and Steamer 10 from River Street saw the light of the fire and disregarding the running card, started right after the first alarm. Steamer 3 made fully as good time as with horses while Steamer 10 was delayed perhaps a couple of minutes from the lack of horses. Steamer 8 started on the second alarm and Steamer 6 started on the third alarm. In this way, it was twenty minutes after the first alarm before all of these six steamers were at the fire. Under ordinary conditions, the last one should have been at the fire about as the third alarm was ringing.

Whether the fire could have been checked before getting well across Summer Street, had all these steamers come on the first alarm, is entirely guess work, but there must have been a time, about when Chief Damrell arrived, when two or three steamer streams, had they been immediately available on Summer Street, might perhaps have changed the course of events.

Chief Damrell came on foot from his home on Temple Street as soon as the first alarm struck, passing the corner of Beacon and Park Streets as the second alarm was sounding and probably reached the fire about as the third alarm was ringing. He described the fire as he first saw it in these words.

"I say this, and wish to be distinctly understood, that in my experience in the Boston Fire Depart-

ment, covering twenty-five years, I never saw such a sight as was presented that night; within eight minutes from the time the alarm sounded, I was on the ground, and the building was literally consumed. I don't understand it today. It is a phenomenon which I cannot possibly fathom. With all the fires we have had in that district and other sections of the city, for the past twenty-five years that I have been connected with the Fire Department, I never saw the time, no matter how inflammable the building was, whether it contained oils or any other inflammable material, but what we could enter the building itself; but here was a case where you could not get near the building. On each side it was all on fire, through the Mansard roof, within eight minutes of the time that the alarm was given,—a sight I never beheld before in this city or in any other where I have happened to be when there have been large fires."

The Chief first went to the passageway on Kingston Street and found the three lines of Steamers 4 and 7 and Hose 2 at work. He then went back to Summer Street and found that the copings and roofs of the buildings opposite were smoking and commencing to burst into flame and that the Summer and Kingston street walls of the building where the fire started were beginning to crumble from the top. The fire had apparently travelled through the upper stories from the rear of the building to Summer Street with lightning rapidity.

A line of hose from Hose 8 had been taken up the stairway in the front of the building and had gotten as far as the second floor. This was ordered out and the men who had made the venture had difficulty in escaping through the shower of granite blocks and debris.

Steamer 10 had arrived by this time and had taken a hydrant at the corner of Summer and Arch Streets but Steamers 6 and 8, with the punch that perhaps even then would have checked the northward progress of the fire, were still on the way. Chief Damrell apparently realized that the situation was the most critical that had ever confronted him for he ordered the "general alarm" which started all the rest of the apparatus in the city on its way to the fire. The time was 7:45 P. M.

Messengers had been sent to meet Steamers 6 and 8 and to direct them to their positions, Steamer 6 to the corner of Summer and Devonshire Streets and Steamer 8 to Winthrop Square. Every possible effort was to be made to confine the fire on the north side of Summer Street to the block bounded by Otis Street, Winthrop Square and Devonshire Street. **Within a few minutes after the general alarm, Chief Damrell called on Cambridge and Charlestown for help. Even at this time he seems to have felt that he had a fair chance to stop the fire, but he had hardly completed his dispositions for massing the steamers when a shortage of water began to develop.**

As outlined above the water mains were small and the hydrants were far apart and of a type to which only one steamer could be attached. When Summer Street was a district of residences, a six inch main and these old fashioned hydrants had been ample, but now in their efforts to get water from this main, the steamers were literally robbing each other. Steamers stopped pumping that others, at points seemingly for the moment more critical, might have water. Even the underground fire reservoirs, fed from the mains as they were by four inch pipes,

could not meet the demand of the steamers.

The fire began to spread out and cross Devonshire and Otis Streets to the east and to the west, at the same time continuing its uninterrupted march northward and it was not long before it had reached such proportions that, even had there been water in plenty, there was not enough apparatus immediately available to cope with it. Not long after 8 o'clock Chief Damrell sent out wide spread calls for help so that as the night wore along, steamers, hose and men began to pour in, eventually from points as far away as New Haven, Conn., and Portland, Maine.

By late afternoon on Sunday, 42 steamers, 4 hand engines, 53 hose companies, 3 ladder trucks, about 1700 men and 40,000 feet of hose had arrived in the city.

The fire does not seem to have travelled as a solid wall of flame but went from building to building by catching here and there on the roofs and around the copings and windows and in some instances by the burning out of the timbers set in the comparatively thin brick walls.

Chief Damrell as one means of at least partially checking its spread sent a request to the police department to organize fifty officers to break into stores and secure carpets and blankets and to use these in a wet condition to protect the roofs, copings and windows from the flame-generating heat. The police department, apparently because its forces were scattered and necessary to handle the great throngs which had collected, does not seem to have made any attempt to comply with this request.

That Chief Damrell's idea was a good one, however, is shown by the fact that Hovey's building was saved by members of the firm and employees who used these tactics. The story of the saving of Hovey's building is too long to detail here, but as told by Mr. George Gardner it is well worth reading as an example of courage and faithfulness, and as showing how a very little water properly applied can be made to have a great effect.

The iron railing which can be seen along the front of the roof of Hovey's building today, and which was originally placed there for protection when clearing the roof of snow, played a part that night in helping to keep the fire from the building. Buildings on the west side of Washington Street were also protected by the owners and tenants in much the same manner as Hovey's, so that the fire did not cross Washington Street. It seems possible to believe that if the Chief could have effected the organization of citizens into "blanket" brigades they might perhaps have been effective in stopping the fire at other points.

As it became apparent that the fire was beyond all hope of control by the fire department, citizens began to urge on the Mayor the necessity of the use of gunpowder. Chief Damrell and his Engineers were almost uniformly opposed on general principles to the use of gunpowder, but after consultation yielded to the demand and written authority was given by Chief Damrell to various citizens to "remove goods or blow up buildings" as their judgment might direct. A number of buildings were blown up or partly demolished, but the lack of suitable means for confining the powder generally made the destruction very incomplete. The late Major Henry L. Higginson, then a comparatively young man, realized the enormity of the situation and that

Courtesy of Bostonian Society

heroic measures should be taken and urged on the Mayor that a path where a stand could be made should be created by blowing up buildings in a line from Washington Street to the harbor and far ahead of the fire.

The work was not done, however, in such a systematic manner nor by a prearranged plan, but was done by piecemeal here and there, the actual explosion being made in almost every case after the building mined had caught fire, so that in its final results gun powder played no large part in stopping the fire.

Generally speaking, once the fire had gotten well across Summer Street and into Winthrop Square, there appears to have been no definite concerted plan to stop it. Lack of water prevented an effectual massing of steamers at Franklin Street where the width of that street furnished the best opportunity. The movement of the fire was in most respects one of steady progress although early in the evening it made one big jump when the Hartford and Erie Railroad Station at the foot of Summer Street and the wharves adjoining it caught fire from flying brands.

The story of the travel of the fire from building to building and from street to street is too long to detail here and would be but a repetition. Suffice to say that it was after noon on Sunday when its continued advance had been checked, with Hovey's Building standing near the southwest corner overlooking a desolate sixty-five acres of smoking ruins. Included in the buildings destroyed were seventy dwelling or lodging houses, twenty-eight of which were located, strange as it may appear to the younger business man of today, on Purchase Street.

An accurate idea of the area burned over can be gained from the map on page 7, notice being taken of the fact that although the fire travelled the entire length of the southerly side of Summer Street its advance to the south was comparatively small and that on Kingston Street it was stopped after it had destroyed the building in rear of the building where it started.

The wind blowing at from five to ten miles an hour held from the north and northwest or in the general direction of South Boston, throughout the fire so that the fire presents the phenomenon of having burned against or across the wind over most of the territory consumed. The United States Signal Service officers in their report to the Chief of the Signal Service of the Army contrast this with the Chicago fire of the year previous where, with a strong wind blowing, the fire burned to leeward.

The total loss was estimated by Thomas Hills, then Chairman of the Board of Assessors, as about $75,000,000. As an example of increased land values, it appears that within a short time after the fire, land on Summer Street opposite Church Green, then assessed for $11.00, sold for $17.00 a square foot. Today land in that location is assessed for about $45.00 a foot.

So far as building and street conditions before the fire were concerned, it is known that the English Underwriters after the Chicago Fire of the year previous had caused a survey to be made of the large American cities and had found conditions in the business section of Boston such that at the time of the fire they were seriously considering the cancellation of their risks.

That Boston was not discouraged by the disaster is evidenced by a walk through the district today and an observance here and there of the

Courtesy of Bostonian Society **Panoramic View of the Burned**

capstones of brick and granite buildings bearing the figures 1873. In the rebuilding, however, no substantial progress was made toward fire prevention, except as widened streets furnish better opportunities to stop a fire. As previously mentioned, all the principal streets were widened and straightened and Post Office Square created. Franklin Street which had extended only to Federal Street was cut through to Pearl Street, there to meet what had been Sturgis Street. A noticeable effect of the widening is seen today on the easterly side of Washington Street, between Summer and Milk Streets, where a distinct set-back from the general building line of Washington Street is apparent and on the Summer Street end of Chauncy Street where the fire line is distinctly marked.

The new buildings so far as fire resistance is concerned were in their individual characteristics somewhat more fire-retarding but in their entirety they presented little advance in the art of fire resistance, and it was not until structural steel and concrete came into general use that we began to approach a fire resisting construction.

Since then the northerly end of the burned district has been fairly well for the second time rebuilt and this time with fire resisting structures with an uncomfortable sprinkling of the old type still scattered between the newer buildings. To the east in the section bounded by Otis and Devonshire Street on the west, Franklin Street on the north and Atlantic Avenue and Summer Street on the east and south, there is practically no modern fire resisting construction. Of the area of down-town Boston not burned over in the Great Fire, the entire section to the north of State and Court Streets today presents hardly an example of modern fire resisting construction. To the south and west of the burned area, we find more modern buildings, though comparatively widely scattered, among the old ones.

Since 1872 the building code and the requirements of the Underwriters have brought into use many devices like automatic sprinklers and water curtains, automatic doors, wire glass and automatic fire alarms to prevent

)ld South Church on extreme left.

and retard the rapid spread of fire. The personnel of the fire department is now a highly trained force, equipped with what appears to be a fairly ample supply of the best fire fighting machinery available. In short, both in men and apparatus, the Boston Fire Department is second to none. Of late years, it has been highly successful in handling down town fires, so that a fire which burns out one of these old buildings is a rarity.

As compared to Chief Damrell's situation fifty years ago when it took him nearly two hours to get his twenty-one steamers to work, the present Chief with normal conditions could mass almost fifty pumping engines on Boston Common in less than half an hour, could summon almost as many more from other cities and towns within an hour, has ample mains and hydrants with which to supply those engines, has also throughout the central part of the city the new high pressure fire service capable of supplying under proper pressure for fire service 10,000 gallons of water a minute and eventually to be capable of supplying 20,000 gallons a minute, has deck guns and water towers which control and direct streams which men unaided by these devices could not control or direct. Yet when asked whether a repetition of the Great Fire could occur today he laconically replied "Nothing is impossible."

In this reply he was probably guided by the fact that most great fires are the result of an unforseen combination of circumstances and a sometimes almost unbelievable chain of events. As a matter of fact, however, it does not seem probable that a fire covering such an area could occur again unless it be to the north of State Street. The loss in 1872 over an area of sixty-five acres was not over seventy-five million dollars. It is not difficult to pick out some very much smaller areas today where the loss of a total destruction would exceed the entire loss in 1872.

But the Chief is right when he says that nothing is impossible for within the year the C. B. & Q. R. R. building in Chicago, an office building of approved fire resisting construction, fifteen stories high and

protected on its exposed side by an eighty foot street was subjected to the heat generated by the burning of several low, old-fashioned buildings and was practically gutted of the contents of its upper stories including plans and records of the railroad which had cost over five million dollars to make and assemble.

With the protection afforded by the eighty foot street, it had not been thought necessary to use wire glass or shutters to protect the window openings. The Chicago Chief used at this fire only a portion of his department but that portion included more pumping engines than Boston today has altogether and more than were probably actively engaged in our Great Fire.

The word "fireproof" as applied to a building was a distinct misnomer in 1872. It is almost as much of a misnomer today. The best we can expect of any building is that it will still be structurally sound after passing through any heat that it may be subjected to from the exterior and that any fire starting in the interior will be confined by the building itself to the floor on which it originated. In other words, it is a building which from its own substance will not generate any large degree of heat and of a substance which can resist without structural failure such heat as it may be subjected to.

The degree of heat generated by a burning building and its contents is enormous, literally running into the thousands of degrees fahrenheit. Your cook will tell you that the oven in your kitchen stove never goes above a few hundred degrees and yet you will find that a piece of paper put in the oven will be charred to a crisp. A fire around one of these fire resisting buildings, as happened in the C. B. & Q. fire, puts the contents of the fire resisting building in about the same situation as the paper in the oven, only with the oven very much hotter.

Fire departments have made tremendous strides, but it is doubtful if they can ever be many strides ahead of a conflagration as long as the old structures remain in large groups. As far as fire-resisting buildings in Boston are concerned, many of them have a worse exposure than the Chicago building and almost any one of them is liable to be put in the situation of Poor Dog Tray of nursery fame who was whipped because he was in bad company.

The Fire Menace

By JOHN O. TABER
Chief, Boston Fire Department

ON the night of November 9th, 1872, it was my fortune to have been playing in Kingston Street, and with my boy companions to have seen the fire as it went up the elevator shaft. We boys ran to Hose 2 on Hudson Street to tell them of the fire, and helped to drag the hose reel to

the fire. I remember well of seeing the connecting up of the line to the hydrant and of helping to "light up" on the line of hose as the pipe or nozzle was taken into the alley. Naturally, as a boy of eight, I little realized that the day would come when I should have the honor of being Chief of what I believe to be the finest fire department in the world.

I hope that neither I nor any of my successors will ever be confronted with the problem that confronted Chief Damrell on that night, but I believe that Mr. Decrow is right when he says that we are even now, with all our apparatus and all our men and all our water supply, not many strides ahead of a conflagration. We have acre upon acre of buildings just as combustible as were the buildings in 1872. We are nowadays generally lucky enough to get notice of the fires early enough and to get the apparatus there soon enough to stop fires before they assume conflagration proportions.

With our motorized department, horse diseases cannot affect us, but as Mr. Decrow points out, it is the combination of unusual circumstances which may affect us. The great increase in the number of motor vehicles on our streets may some time cause us trouble, and delay the apparatus just enough to allow the fire to get away from us.

From our point of view, the congestion of the streets by the great number of motor vehicles, both parked and moving, is getting to be a very serious matter. We also have weather conditions occasionally as we had two or three years ago, when the great fall of snow kept us at our wit's ends to be sure we could get apparatus to a fire. These are two instances, either one of which combined with some other seemingly more or less unimportant happenings might make the unusual combination of circumstances which would let a fire get too far ahead of us.

The contents of our modern buildings are just as combustible as were the contents of the buildings in 1872, and these contents can easily be burned by a fire from the outside as happened in Chicago and in a number of other cities. These modern buildings do, however, make good conflagration stops where we could make a stand. Chief Damrell did not have them in 1872.

If we are ever again unlucky enough to have a fire of conflagration size, either in the business or residential sections of the city, I cannot urge upon the citizens too strongly the necessity and wisdom of staying at their homes or places of business, as the case may be, and of protecting the buildings by every means possible, whether it be wet blankets, buckets of water, a garden hose, sand, or what not, from the flying brands.

Hovey's building is standing today because Hovey's people stayed at home and sawed wood instead of star gazing and depending on an already overworked fire department. I

haven't any question either that, had all the people of Chelsea stayed at home and watched their property, the loss would have been reduced a great deal. It is human nature to want to watch a fire, but when that fire begins to spread it is a pretty good time to stop watching it and to help the fire department by watching your own home or place of business.

A Tragic Night

By DR. CHARLES W. ELIOT

ON the evening when the great Boston fire of 1872 broke out I was sitting by the bedside of a young cousin who was mortally ill—when the fire bells rang. I counted them, but did not leave my seat; but when, after a short interval, they rang again, I rose and looked out of the window. A bright and extensive fiery glow lighted the sky. I bade my cousin goodnight, and left the house at once. It was nearly nine o'clock when I ran across the Common and down Winter and Summer streets, where fire apparatus was arriving, wagons loaded with goods were already trying to get northward or westward, empty wagons were trying to move in an opposite direction, and a great crowd of people filled the streets and the sidewalks.

On Winter street I passed close by a British Army officer with whom I had had some pleasant talk the day before. The light from the fire was so brilliant that we easily recognized each other; and I stopped at his side. He spoke first, saying, "Mr. President, I have been on this street, and nearer the fire, for fifteen minutes. There is apparently nobody in command of your Fire Department, no concerted attack on the fire, and no guidance is given to the arriving apparatus. How can this be?"

I replied that I had only just reached the spot, and had seen nothing for myself. When he added that the fire had already acquired a fearful headway, and that there was no effective police control of the crowds, I could only express my surprise and mortification. I pressed on as far as Pearl street, where I could see the crowd, the flames, and the futile efforts of a few leading-hosemen, who were pouring water not into the interior of the burning stores but on to their granite fronts.

I remained in the streets nearest the fire for an hour or more, long enough to see that the fire was rapidly eating its way northward toward Washington street and eastward towards State street. In great alarm for the College property and records I struggled through Devonshire and Water streets to Washington street. The office of the Treasurer of Harvard College was at that time over the bookstore of Little, Brown & Company on the southerly side of Washington street half way between State and Water streets. The windows of the office looked right over the burn-

ing district. I found that the Treasurer, Nathaniel Silsbee, had reached the office just before me; and we held an immediate consultation as to the removal of the records of the President and Fellows to some safer place.

Dr. Nathaniel B. Shurtleff, Secretary of the Board of Overseers from 1854-1872, and a member of that Board two years earlier, lived at a house on Beacon street close to Tremont street; and I knew that he had corrected many valuable books and records. I hastened thither, found him on the alert, and very anxious and troubled; but he at once assented to my bringing the records of the President and Fellows of Harvard College to his library, saying that he was hoping to make arrangements with two friends who owned horses and carriages for the removal of all his books and papers to a place of safety, in case the fire approached his house.

Thereupon Treasurer Silsbee and I carried the original record-books and most important papers of the President and Fellows through the turbulent streets to Dr. Shurtleff's house by several trips, and then returned to the Treasurer's office to watch the progress of the flames towards Washington street. I made repeated excursions to the immediate vicinity of the fire, and witnessed the destruction of several valuable stores on Franklin and Washington streets which belonged to the University.

In the early morning I discovered that a new defense of the north side of Washington street had been organized, that a considerable group of engines, mostly new arrivals from towns and cities about Boston, had been planted in the rear of the buildings on the north side of the street, and were effectively defending that row of buildings from Temple Place to School street. Happily a commander had appeared in the person of an assistant chief of the Fire Department. He had acted on his own responsibility without orders from any superior.

From the Treasurer's office (the building went all the way through from Washington street to Devonshire street) Mr. Silsbee and I watched anxiously the progress of the fire both eastward and northward. The securities held by Harvard College were at that time deposited partly in the vaults of the first Safe Deposit Company organized in Boston (chiefly through the labors of Col. Henry Lee), and partly in the Suffolk Bank Building at No. 60 State street opposite the heavy granite building called the Merchants Exchange. This latter building had a roof made of stone, and was supposed to be fireproof.

In spite of the efforts of a considerable number of volunteer helpers the flames got into this building through windows; and before long the roof fell in, some of the volunteers who were working on it barely escaping with their lives. Thereupon Treasurer Silsbee and I consulted a third member of the Corporation, Mr. Francis B. Crowninshield, whose office was nearby, about removing the securities of the College from the Suffolk Bank Building to Cambridge. I had earlier ascertained through a messenger that the Charles River Bank in Harvard Square would receive the securities of the College.

Mr. Crowninshield approving, we packed all the securities into an old-fashioned carpet bag made of carpet and leather, which stood nearly three feet high when placed on its end, and then held a consultation on the means of getting that bag to Har-

vard Square. No private carriage or other conveyance was procurable.

We decided to carry the bag through the streets to Bowdoin Square, and there take a horsecar to Harvard Square. I carried the bag, Mr. Silsbee walked beside me on my right, and Mr. Crowninshield followed with his right hand holding a pistol in the pocket of his coat. In about three-quarters of an hour we had the satisfaction of depositing that bag in the Charles River Bank.

When we got back to Boston we found that the fire had been checked on the north side of Washington street, had not crossed State street, and had been stopped on part of its southerly front by blowing up, before the fire actually reached them, rows of buildings which were obviously to be the next victims of the flames. This measure was taken on their own responsibility by a few ex-officers of Massachusetts troops in the Civil War with explosives which they themselves procured and fired. They had earlier sought authority at the City Hall to use explosives; but the Mayor had not been able on the moment to find in the law books at his office a safe precedent for authorizing such action. I saw nothing of this blowing up process—only heard about it from friends a little later.

After walking through several streets where the tired firemen were at work, and finding that a good number of volunteers were giving them food and coffee, I again crossed the Common to my mother's house on Charles street, got some food, and took a nap.

The Business Lessons of the Fire

By FRED I. BROWN

Brown-Howland Company

IN the picture on the opposite page of the ruins of the building where the Great Fire started is a wooden sign stuck in the lamp post which reads "A. K. Young & Co." It tells us that Mr. Young's firm started business again.

From Mr. Young's own testimony, we know that up to the time of the fire the profits for the year had been over $30,000.00; that the insurance on his stock was far below his losses; that he had recently declined to renew one policy on its expiration; and that his accounts receivable were something over fifty thousand dollars, of which all evidence was gone, for his safe, had not protected his books. He frankly admitted that every time he put his books away he knew he was taking a chance with an "unsafe" safe whose door would not lock.

When Mr. Young opened up his new office, he started with an abso-

Courtesy of Bostonian Society

WHERE THE FIRE STARTED

lutely clear desk, without a new order or the record of an old, and with his books of account destroyed.

Mr. Young's case is typical of dozens of others, whose testimony at the hearings following the fire was almost unanimous that their paramount thought as they watched the flames wipe out their business or raced with them to locations that were threatened, was the saving of their "books of accounts and records," — few of them adequately protected.

Fifty years have seen almost immeasurable improvement in the science of fire-fighting and its tools; have seen the fire department raised to a profession, and multiplied by hundreds in men and apparatus; have seen insurance recognized as an indispensable service, as sound a part of any business as integrity for on it depends the protection of creditors and stockholders; have seen the development of the fire-resisting building, that like the Postoffice fifty years ago, will always do their part in holding back the spread of fire; have seen the growth of building and fire laws that mean even better conditions as time goes on, and recently have seen signs of a sentiment of fire-prevention that means not only safety first, but the consideration of thy neighbor as thyself.

But these fifty years have also seen the narrow streets of Boston, in spite of the widening after the fire, grow more congested and difficult with the relative narrowing by the larger buildings and the increase of traffic beyond their capacity; have seen property values so concentrated that the destruction of one block today would in many cases exceed the fire loss of the whole sixty-five acres of the big fire; have seen the taming of that great servant, electricity, so invaluable in every way, but to whose door is laid an amazing percentage of the fires of the country; and they have seen through the development of communication the marvelous consolidations of big business with their dependence upon records for any kind of successful administration. It is the mass and value of these records, peculiarly susceptible to fire and water, that mark the difference of business then and now.

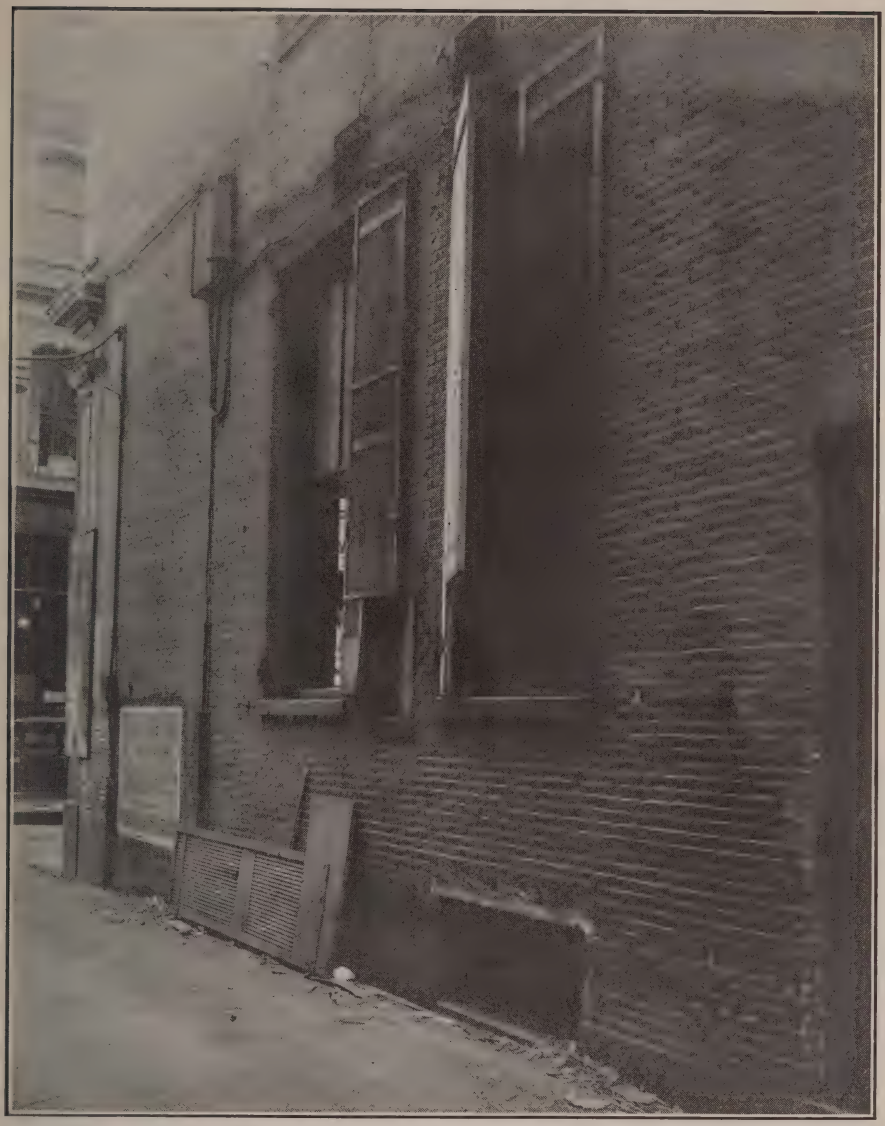
In today's fires the loss of building, equipment, tools and commodities may be large,—the loss of time and difficulties of operating in temporary quarters may be equally large,—but the greatest of all losses is the handicaps resulting from the destruction of business records. The researches and experiments of the past,—agreements made,—worked-out plans in operation,—responsibilities incurred, —obligations owed,—obligations due, —records, too important to trust to memory, these are the big things in any business.

In fact, insurance will cover destroyed commodities, buildings and equipment, will also cover lost time and lost profits, and, in some cases the new buildings, the up-to-date equipment and the latest seasonable merchandise, paid for by insurance reparation, become a potential gain rather than a loss. But vital records are practically uninsurable as well as unreplacable.

It may take another fifty years, or possibly another "Boston Fire" to rebuild the old districts of the city, and bring our better districts up to some uniformity in fire resistance.

Even then, the Fire Chief's "Nothing is impossible" would apply to conflagration possibilities in Boston.

One of the messages of the "Boston Fire" is that, in spite of favorable wind conditions, it got away from control because of a slight delay in



Courtesy of Brown-Howland Company

The alley off Kingston street where the fire started, as it appears today. The fire probably had its inception in the basement against the wall of which the fire shutter may be seen in the photograph.

sounding the alarm, a slight delay in the arrival of the apparatus, a slight delay in surrounding the fire, delays that totalled only a very few minutes, but those minutes vital and precious. Once the delay, wooden roofings and copings, and insufficient water for such unusual conditions completed the combination for destruction.

It is the story of every big fire,— some delay in the beginning combined with some unusual condition of wind or weather or water, and a Baltimore, or a San Francisco, or a Chelsea, or a Salem, or an Augusta fire is added to the big twins of '71 and '72, Chicago and Boston.

Boston will always have her narrow streets. She will also have her occasional high winds and bitter freezing weather, which sometimes combine in such furious storms as the "Thanksgiving Blizzard," which left no vestige of a Portland boat. Mix these some night with fifteen to twenty vital minutes of delay, and the fire department will again need the help of Providence and all her other neighbors.

Another message of the Boston Fire is the limitation of building construction for fire protection. There are many in those days who never dreamed that fire could sweep brick and granite buildings out of existence in a few hours. In fact, there was a tradition that the Fire Chief, a few weeks before, on his return from a visit to the Chicago ruins, had said that "Boston could not have such a conflagration." This was denied by the Chief, and unquestionably was never said by him, but it passed currency with the indifferent popular mind that wanted to believe it true.

Today men place their faith in the new "fireproof" buildings until a daytime fire in the Edison plant at Orange, sweeps thru a dozen buildings, seven of them "fireproof" in less than four hours, absolutely destroying their contents. Until a fire in Chicago, originating in not the worst type of low buildings, jumps an eighty-foot street, leaps high in the air and with its hot breath blows out the windows from the ninth to the fifteenth story of the C. B. & Q. "fireproof" building, and in less than two hours licks up everything combustible on these floors, including records and their containers, with a breath and a tongue so hot that metals melting only at high temperatures fuse into mixed molten balls.

Another message of the Boston Fire is the fundamental but often unappreciated value of records. The testimony at the hearings brings out dramatically "Your fire" is always "The fire," and the price of carelessness is exorbitant. In this fire, as in many since, carelessness in fire preventive measures has thrown a suspicion on innocent men that they have never been able fully to remove.

The enactment of the present Massachusetts Income Tax Law brought to the tip of the tongue a word or phrase with hitherto little usage "intangibles." In connection with that law, it meant, substantially, negotiable securities. The same word, though with not quite so limited a meaning, should be adopted and used far more extensively than it is with reference to fire losses. Every business and profession has its intangible assets. Some forms of these intangibles can be capitalized as for instance "good will," but the form most affected by fire losses cannot be capitalized, — namely, — the books of accounts and records. Ordinarily, the figures for our fire losses do not include the loss occasioned by the destruction of books and records, and yet oftentimes the net loss to the business man from this source is far great-

er than that suffered from the loss of commodities.

For instance, the stock in trade, so to speak, of our insurance companies is almost entirely comprised of books of accounts and records. The destruction of their offices would entail practically no loss of commodities, but would entail a loss of records which form the substance of their business. Some of our great department stores, if destroyed by fire, would suffer a tremendous loss of commodities, and might also suffer a tremendous loss of intangibles. With their thousands of charge accounts, just imagine what confusion and loss would result if their records were destroyed just after Christmas.

These are two extreme examples, but the same principles apply to a greater or less extent to every business and profession.

In years to come, perhaps during the lifetime of men just entering business, downtown Boston will be composed entirely of fire-resisting structures. In the very nature of things, however, we shall never have fireproof contents, so that we shall always have fires of greater or less magnitude.

In fact, our hottest fires are within fire-proof buildings, for they are like stoves or reverberating furnaces, cumulating the heat to extreme temperatures, and destroying not only combustible material, but making shapeless forms of metal equipment and implements, and even fusing porcelain insulators.

Mr. Young had to take a chance on his stock in trade—he lost, but was partially reimbursed by his insurance. His safe may have been the best available at that time, but even then he took a chance with a door that wouldn't lock. But if the safe was the best available, we know that it didn't resist the heat to which it was subjected, and Mr. Young lost his books for which he could not be even partially reimbursed by insurance.

Records, like delicate commodities, have fire hazards different from building hazards. Of these water is the most destructive, and in modern fire-fighting, water in superabundance is almost the first principle.

When the Fire Chief planned an anniversary exhibition at historic box 52, he had to caution the department to turn off the water as soon as it reached maximum height (a matter of two or three minutes) for fear of flooding the cellars of the neighborhood. No such consideration would be given were the fire a real one, and think what it would do to the records and valuables in a basement vault with the usual two thin metal doors.

It is significant that in the alley where the fire started, almost on the identical spot where you would place a commemorative tablet, the fire shutter that protects it from its neighbors, and from one of the worst fire districts in the city, has rusted or broken off its hinges, and has for weeks laid against the wall, a memorial tablet to business men's indifference and forgetfulness in regard to fire.

Progress in Fire Protection

By THEODORE H. GLYNN

Fire Commissioner, City of Boston

ON Saturday, November 9, 1872, at 7:24 P. M., an alarm of fire was sounded from box 52, at the corner of Lincoln and Bedford streets. This was followed by four additional alarms received in rapid succession. These five alarms called the entire working force of the department to the scene of a fire which had started in the basement of a granite building at the corner of Summer and Kingston streets, occupied by Tebbitts, Baldwin and Davis as a dry goods store, and A. K. Young, hoop-skirt manufacturer. The fire originated in the basement and burned through the elevator shaft to the upper stories and through the roof. The illumination from the fire was seen as far away as Charlestown fourteen minutes before the first alarm was sounded in Boston.

The fearful fire which resulted was the greatest catastrophe which ever visited Boston, and in the opinion of the officials in charge of the fire department in 1872 it was due to the unaccountable delay in giving the alarm. The report of the commission appointed to investigate the cause of the fire and the efforts made for its suppression states that the fire "raged without control till the afternoon of the following day (Sunday) spreading through the best business portions of Boston, covering sixty-five acres with ruins, destroying 776 buildings, assessed at the value of $13,500,000, and consuming merchandise and other personal property estimated at more than sixty millions of dollars."

The date of this terrible conflagration marked an epoch in the history of Boston, and, approaching as we are the fiftieth anniversary of the disaster it is truly characteristic of human nature that we should review the past half century, not with any intention of boasting of our good fortune in escaping a similar fate, but to find out if we have made any real progress in preventing the possibility of such a catastrophe befalling us again. In such a review there is considerable opportunity for comparison in fire conditions of 1872 and 1922.

In 1872 the population of Boston was only 290,000 compared with approximately 825,000 today. The fire department at that time was under the control of the Board of Aldermen and the Common Council.

As the size of the fire was attributed in a great measure to the delay in giving notice it is well to consider at the beginning the facilities of half a century ago and the fire alarm system of today.

The total number of fire alarm boxes in 1872 was 164. Today there are 1,270 such boxes installed throughout the city. The modern boxes are known as the "keyless door" type, while up to a few years ago the boxes were all locked and the keys entrusted to the care of certain citizens living or doing business in the vicinity of the box. The delay resulting from

the obligation of finding the key before sounding an alarm is very apparent. If the custodian of a key was careless, or his home or place of business closed much valuable time was lost in searching for some other caretaker. All public boxes today are of the keyless door type, and delays of this character are avoided.

In addition two or three private fire alarm companies are doing business in Boston today. These companies install private fire alarm systems in buildings, and over these systems alarms are transmitted to their central offices, and thence to the fire department. The systems are either automatic or may be operated manually without delay, thus assuring the fire department of prompt notice of the existence of a fire. Many potential conflagrations have been checked in the first five minutes, and in order to accomplish this the city of Boston has extended its fire alarm system commensurate with its growth.

In 1872 the membership of the department comprised a force of approximately 475 men, 385 of whom were call members, and the other ninety permanent men engaged in driving and operating the apparatus. It was necessary at the time of the great fire to enlist the services of approximately five hundred additional men. The pay roll of the department of 1872 amounted to a little over $221,000, while in 1922 approximately $2,400,000 will be expended for salaries. Today the department gives employment to 1,400 men, twelve hundred of whom comprise the actual fire fighting force. The entire department is now on a permanent basis and there are no call men.

In making a comparison of the personnel of today with that of years ago consideration should be given to the type of men in our department at the present time. All appointments are made from eligible lists established after competitive civil service examinations. In order to pass these examinations a man must do considerable studying and also be in first class physical condition to pass the rigid physical tests imposed on all applicants for appointment. All promotions in the department are made in an almost similar manner which induces the men to apply themselves industriously and become fully acquainted with the duties of firemen in order to fit themselves for the examinations.

In addition the department conducts schools of different kinds, frequent drills and inspections, thereby maintaining the efficiency of the personnel at a high standard. These features were unknown fifty years ago, and cannot be effectively adapted to a call fire department.

In 1872 the fire department consisted practically of twenty-one engine companies, each having a hose reel, or "jumper," the steamers being of small capacities; ten hose companies; seven hook and ladder carriages; and three extinguisher or chemical companies. Of the twenty-one steamers in service, six were located in the city proper, three in East Boston, three in South Boston, three in Roxbury, and six in Dorchester. Of the seven hook and ladder carriages only two were in the city proper.

Today our fire fighting equipment consists of fifty pumping engines, three fire boats, thirty ladder trucks, three watertowers, one chemical company and one rescue company. In addition the department maintains a good percentage of reserve apparatus in first-class condition ready for emergency. Practically eighty-five per cent of this equipment is motorized. A pumping engine of today has approximately the relative value of two of the steam fire engines of fifty years ago.

In 1872 the fire department was severely handicapped by an epidemic of a horse disease known as "epizootic," making it necessary to draw several of the pieces of apparatus to the scene of the fire by hand. It required about two hours to concentrate the total force of the department at any given point in the city in 1872. Today, with motor apparatus, and operating under a modern assignment system, we are able, if necessary, to mobilize all our apparatus in any part of the city in less than one-half an hour. The cities and towns around Boston are well equipped with motor apparatus, and upon call could assemble their men and equipment in almost any part of our city in a very short time.

The fire department carries on sixty percent of its apparatus what is known as "deck guns" for the purpose of concentrating heavy streams. The high pressure wagons are equipped to operate streams of such extreme calibre as to penetrate a blaze of the greatest magnitude and do effective work, where, in the earlier days less powerful streams would practically feed the flame.

Water and fire in a controlled state are two of the greatest servants of mankind today. Either, uncontrolled, present a problem and wreck havoc wherever they choose to strike. Water, applied in proper force and volume performs a great service to man in checking the ravages of the fire demon. When we look back and view the situation of fifty years ago we are amazed that even greater loss did not result from the terrible fire that visited the city.

In 1872 the water service in the down-town section consisted of a single set of mains, there being a 24-inch main in Washington street, from which a 12-inch pipe led through Bedford street, and down to what was then known as Broad street, now Atlantic avenue. This pipe continued on to State street and came up State street connecting again to the 24-inch main. The district lying inside this territory was lined with 6-inch and 8-inch pipes, most of which had been underground for many years. The hydrants for fire purposes were of an old type, with off-sets from the pipes on 4-inch pipe, and having but one outlet so that but one steamer could be connected to a hydrant. In many instances the hydrants were many hundred feet apart.

There were also scattered throughout the district quite a number of underground fire reservoirs supplied from the mains by a 4-inch pipe. The main in upper Summer Street was of the 6-inch type, and without doubt was considerably reduced in efficiency through rust and inside accretions.

Today the district is gridironed with mains ranging from 36-inch feeders down to 8-inch pipes. Throughout the greater part of the district there are three independent systems of mains, namely, the so-called low service which furnished the general supply of water for domestic, business and fire purposes; the high service which ordinarily furnishes water for automatic sprinklers, hydraulic elevators, and similar arrangements, but, nevertheless, easily and quickly available for fire purposes; and the high pressure service of recent installation, intended for and devoted entirely to fire purposes. This latter service delivers water at the hydrant at the necessary pressure for fire purposes, and when desired makes the use of portable pumping engines more or less unnecessary. Thus Sum-

mer street today has all three services, a 12-inch low service main, a 12-inch high service main, and a 16-inch high pressure fire service main. This applies in a general way to almost the entire district which was burned over in 1872.

The hydrants are now of the modern type, with three and four outlets, and to a large extent connected directly to the main. Where off-sets are necessary they are of much larger size than were provided in 1872. Today the hydrants in our downtown section are spaced approximately 125 feet apart. Of course, in some instances they are much nearer where physical conditions govern the location. In the city of Boston today we have approximately eleven thousand hydrants.

Insofar as our present high pressure system is concerned, viewing it as an uncompleted system, we can easily obtain, at various pressures delivered on a fire from twelve thousand to eighteen thousand gallons of water per minute. In 1872, under the very best conditions, with the short line service under engine pressure, the department could deliver about forty-two streams, while today, under ordinary conditions with 300-foot lines, from our pumpers alone we are able to supply one hundred and thirty.

In addition to the protection provided by the city by a better fire department and increased water service there have been many other achievements in the past fifty years which aid in eliminating the possibility of a conflagration in our city.

The building laws of today define the character of construction permitted in the congested area of Boston. In what was the burned district the greater percentage of the buildings are known as first-class construction. Fire walls are required, as well as many other fire stops, which result in confining and retarding the progress of a fire once started.

Fire prevention is taking a position today along side of fire protection. Fires can be prevented as well as extinguished. Just as the medical profession today is expending every effort to prevent disease, so do fire departments devote considerable time and labor in the prevention of fire. In the Boston Fire Department today we have a division known as the Fire Prevention Bureau. Affiliated with this bureau are thirty or more inspectors who are visiting buildings of all kinds in all sections of the city daily, noting defects, and causing the correction of evils. Many of the hazards encountered are corrected immediately on the verbal request of the inspectors. There are found occasionally flagrant cases and conditions which require money and considerable persuasion to correct. These cases require a tremendous volume of attention and correspondence, and on account of this a force of clerks is kept busy at fire headquarters following up and disposing of the recommendations of the inspectors. The citizens of Boston have evidenced a willingness to co-operate with the fire department in its efforts along fire prevention lines and since its inception the work of this bureau has been very successful.

In spite of all that has been done and is being done Boston has problems to contend with which are not present in other cities. Our streets are narrow and traffic is congested. It is almost impossible to overcome the handicap of our narrow streets, but the traffic situation is a matter for regulation. Drastic steps should be taken to relieve the congestion of traffic in our high value district. Here a few moments delay may result in a serious loss at any time. One flagrant feature of this congestion is the

parking of vehicles, particularly of the motor driven type, on or adjacent to hydrants in such a manner as to put the hydrant out of service for immediate use. When apparatus responds to an alarm of fire and such conditions are found, the engines must turn about and locate at some other hydrant, with the result that the most important moment in the life of a fire, so far as the defensive attack is concerned, are being wasted. The co-operation of the citizens is needed in correcting this evil.

Congestion of traffic did not interfere with the fire department in 1872. It has not resulted in serious consequences as yet. The evil is growing, however, and unless checked at once may get beyond control and present on some vital occasion a difficulty that no fire department is in a position to overcome.

Time and again the question has been asked "Could the fire of 1872 be repeated in Boston?" The answer is that American cities are not fireproof in the strict sense of the word. It might be well to quote here a statement made by the present Chief of Department to the effect that "anything is possible." All that is necessary is an unforeseen combination of circumstances, and the entrance of an unknown factor in our daily routine." It can be said that the fire protection provided by the city, and the type of buildings erected and being erected in the high value section of Boston, the possibility of a conflagration covering the area of the fire of 1872 is being reduced to a minimum.

To point out clearly that great fires are still a possibility in our large cities attention is called to the fire in Chicago on March 15 of this year, which resulted in an approximate loss of ten million dollars. To extinguish such a fire a force of 51 engine companies, 6 ladder companies, 7 squad companies, 2 fireboats and 4 insurance patrols was called upon. In pumping units alone this force exceeds the entire complement of this type of apparatus in Boston. This example is not cited to emphasize the fact that there is any great possibility of a large fire in our business district, but merely to impress upon the minds of the readers of this article that it is unwise to rest with absolute security in a feeling of safety from fire.

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